

Running head: IDENTIFYING SPECIAL EVENT STAFFING NEEDS

Leading Community Risk Reduction

Identifying Special Event Staffing Needs for Clay County Fire/Rescue

Lori Fehr

Clay County Fire/Rescue, Green Cove Springs, Florida

June 2007

Appendices Not Included. Please visit the Learning Resource Center on the Web at <http://www.lrc.dhs.gov/> to learn how to obtain this report in its entirety through Interlibrary Loan.

CERTIFICATION STATEMENT

I hereby certify that this paper constitutes my own product, that where the language of others is set forth, quotation marks so indicate, and that appropriate credit is given where I have used the language, ideas, expressions, or writings of another.

Signed:_____

Abstract

Special events and assemblies pose life safety challenges for fire and rescue personnel. The problem is that regardless of the size and nature of the event being held, Clay County Fire/Rescue only staffs one additional advanced life support unit. This may lead to poor patient care and liability to the county. The purpose of this research was to identify staffing needs for fire and rescue during special events and gatherings by answering the following questions:

1. What are some of the ordinances that other agencies have developed in reference to special events and gatherings?
2. What are commonalities between legislation that has been successful and between others who have tried and failed to pass ordinances?
3. What is the potential financial impact of such an ordinance?

The action research method was used by reviewing available literature, documents and conducting personal interviews. This research led to the conclusion that a deliberate policy addressing life safety through staffing and crowd management is necessary for the success of a comprehensive plan that provides for community safety at events and assemblies. Based on this, a proposed county ordinance and departmental policy addressing these events was created.

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Identifying Special Event Staffing Needs

Introduction

People gather where there is an extraordinary happening or event (Smelser, 1971). These gatherings can be as varied as a special event rock concert, a unique holiday celebration at a local pub, or the distribution of needed supplies following a disaster. Regardless of the nature of the event, when there is a planned gathering of people, there should also be a planned fire and rescue response to their potential needs (Giogliotti & Jason, 1991).

“A pleasant environment free of non-inherent risks should be a primary goal for public assembly facility managers.” (Ammon, Southall and Blair, 2004, p. 144). There is a crowd management industry saying “To ignore the danger is to deserve the disaster” (Still, 2000). The problem is that regardless of the size and nature of the special event or gathering being held, Clay County Fire/Rescue (CCFR) only staffs one additional advanced life support unit. This may lead to poor patient care and liability to Clay County.

The mission of the United States Fire Administration (USFA) is “...to reduce life and economic losses due to fire and related emergencies, through leadership, advocacy, coordination and support” (USFA, 2005). This describes perfectly the attributes necessary to develop a comprehensive plan for the safety of county residents, visitors and employees during special events and gatherings.

Community risk is defined as “...a product of community hazards and the vulnerability to the community from the hazards.” (National Fire Academy [NFA], 2004, p. SM 1-71). Through

evaluation of these risks the purpose of this project will be identify the staffing needs for fire and rescue protection during events and gatherings, and to examine the necessity of an ordinance to address these needs. This will be accomplished by collecting information on the actual behaviors and risks associated with special events and gatherings and by mapping the risk/frequency of specific venues and events. These findings along with information gathered from other departments and agencies will be used to examine the particular needs of our department.

Action research combined with a review of the available literature will be used to produce an ordinance to be submitted for consideration by the Clay County Board of County Commissioners (BCC). This research will be used to answer the following questions:

1. What are some of the local ordinances that other agencies and organizations have developed in reference to special events and gatherings?
2. What are the commonalities between those who have been successful in gaining legislation and between others who have tried and failed to pass ordinances?
3. What is the potential financial impact of such an ordinance?

Background and Significance

Clay County is a suburban community located on the St. Johns River in North East Florida. The estimated population for Clay County in 2006 was just over 178,000 (United States Census, n.d.). From April 1, 2000 to July 1, 2003, the population in Clay County was estimated to have increased by 11.9%: this nearly doubles the estimated change for the entire state of Florida (County Guide, n.d., Population section, ¶ 1).

Clay County is ranked 11th among counties in the State of Florida and 77th in the nation for fastest population growth (Enterprise Florida, n.d.). Two neighboring counties, Flagler and St. Johns, actually made the nations top ten for growth according to that same list. In fact, according to CNN Money (2005) “Florida has more of the nation’s fastest-growing counties than any other state”. With this growth in population comes a natural flow of social amenities including concerts, fairs, rodeos, and various other forms of entertainment.

CCFR is a combination department providing both fire and emergency medical services to the community. CCFR is comprised of 185 full time staff members and 79 volunteers. The department consists of 12 stations: (a) two housing a staffed engine company, a staffed rescue (ambulance) unit and a staffed tanker; (b) four housing a staffed engine company and a staffed rescue; (c) three housing a staffed engine company only; (d) one housing a staffed rescue unit only; and (e) two who depend entirely on the response of volunteers. The career personnel are on a three platoon system working 24 hours on duty (a shift) followed by 48 hours off duty. There are also two small municipal fire departments that operate independently within the county. The total operating budget for CCFR for fiscal year 2006-2007 was just over \$10.5 million.

CCFR has historically provided staff and units at an event only when requested to do so by the event organizer. Even when the request is made, it does not automatically result in additional staffing. For example, a request for fire and rescue personnel at the fair grounds may be granted, while a request for a unit at a privately owned BMX motor cross event may be denied. These requests are reviewed subjectively based on perceived level of risk and the department’s ability to meet the request (J.H. Corbin, personal communication, March 20, 2006). Though there are no ordinances addressing staffing requirements for events or assemblies, CCFR (Appendix A) identifies its mission statement as follows:

Our mission through the delivery of programs and services is to protect the lives and property of our citizens and visitors from the adverse affects of fire, medical, environmental, and other emergencies both natural and man made while providing a safe and healthy work place.

Clay County's continued population growth has brought with it a community desire for more entertainment and events (P. Sutton, personal communication, November 13, 2006). Several new venues have been established in an attempt to meet these needs. The Clay County Fair Grounds is currently the largest venue and serves as the setting for many events through the year. Included in these events are the county fair, several rodeo events and The Scottish Highland Games.

In 2004 the doors opened to the Thrasher-Horne Center for the Arts. This nearly 85,000 square foot facility boasts a multi-use theater, two galleries, and a business/tourism center (Thrasher-Horne Center for the Arts, n.d.). It also serves as a designated special needs shelter during declared emergencies such as hurricanes. There are other venues of public interest forming. The City of Green Cove Springs which lies within Clay County is also actively working to transform one of their river front dock areas into a commerce and entertainment district (Reynolds Park Yacht Center, 2005). They currently have vessels operating dinner and dance facilities from the dock and there are plans for extending the venue.

The United States Fire Administration (USFA) lists as one of its 5-Year Operational Objectives, "Appropriately respond in a timely manner to emergent issues." (USFA, 2007). It is certain that as the number of permanent residents and visitors in Clay County continues to grow,

there will be a continued search for activities, culture and entertainment. Therefore, in keeping with the objectives of the USFA and our mission as a department, we must prepare for these situations before they arise. With the amount of information privy to us today about crowd psychology and behavior it is inexcusable to simply be reactionary after an incident occurs.

Literature Review

The literature review reveals that there are a multitude of risks involved when a large number of people gather. The culmination of the available readings on these risks seems to focus on two main categories; fire and crowd surge (crushing). Catastrophic events have been documented for over 100 years, yet the same dilemmas seem to remain at the core of the danger. These sources are a lack of communication and lack of a practiced emergency plan (Chertkoff and Kushigian, 1999).

To make a plan for special events and gatherings it is important to examine crowd psychology and to understand what actually constitutes a “crowd”. Le Bon (2005) discusses the difference between two uses of the term crowd. The first is a common use explained as any number of people gathering with or without any commonalities. The second is a psychological use of the term crowd which describes a group, regardless of size, where “The sentiments and ideas of all the persons in the gathering take one and the same direction, and their conscious personality vanishes.” (p.15). This psychological explanation describes the crowd that must be managed. Le Bon goes on to assert that the psychological crowd is highly impressionable, stating “The first suggestion formulated which arises implants itself immediately by a process of contagion...the sentiments of the crowd is immediately an accomplished fact.” (p. 32). Once the

opinion is formed and has taken hold reason is no longer a valuable tool to effect change (Le Bon, 2005, chap.2, section 4).

Le Bon's theory on crowd psychology gives us good motive to establish and practice sound plans for emergency events. Following Le Bon's reasoning, if the first impression that the psychological group forms is that of organization and control, then order will follow. If however their initial perception is of imminent danger and disorder then chaos will prevail.

There are several other "panic theories" that are also germane to this matter. One of these theories is Smelser's (1971) Value-Added Process for Panic. Smelser defines panic as "...a collective flight based on a hysterical belief" (p. 131). In his writings Smelser characterizes hysteria as an ambiguous threat in the mind that is given an exaggerated power to harm or destroy. Smelser also analyzes the elements necessary to incite panic in a crowd. The five elements of his value-added process theory are (a) structural conduciveness, (b) strain, (c) belief, (d) precipitating factors, and (e) mobilization for flight. Smelser explains that all of these factors must occur sequentially for true panic to occur. Following his theory for example, if a structure has too few exits for the number in attendance at a particular event, in the absence of any other factor this alone will not be enough to cause panic. If we move through the values and introduce a fire in the building (adding strain) this again is not enough to incite immediate panic. Add to this a hysterical belief (whether true or not) that the fire is growing, a precipitating factor of someone yelling "fire", then the mobilization of the crowd with a strong surge, and Smelser asserts that panic is sure to ensue.

Smelser's (1971) work goes on to discuss the control of panic. He contends that if the values are not met in succession, the panic will not occur. Smelser states "Leadership is especially critical in those last few moments before panic breaks out" (p. 162). He contends that

strong leadership can be used to stop the progression of the values and therefore impede the panic. While definitive leadership is a strong control of panic, Smelser stresses that other factors such as early information to dispel hysteria and education on evacuation plans are also powerful tools.

Chertkoff and Kushigian (1999) discuss many panic theories including Smelser's. In their work, however, they go beyond theoretical discussion and attempt to apply these theories to several historically disastrous events. The Iroquois Theater Fire of 1903 claimed 602 lives (National Fire Protection Association [NFPA], 2003). Chertkoff and Kushigian (1999) depict the account in a way that makes it easy to understand how the crowd moved quickly to panic. They describe severe passage restrictions and the fact that the patrons had little knowledge of the pathways. Once the fire broke out, there was a shared belief of an extreme immediate threat of death. The precipitating factor of someone yelling "fire" and the fact that many of the patrons found themselves following pathways to locked doors led to shear panic. There was no leadership and no control as the staff had no emergency training or plan. Combined with the other structural factors involved with this particular fire, there is little doubt as to why this is still the nation's deadliest public assembly fire of record (NFPA, 2003, February).

Chertkoff and Kushigian go on to recount other examples of egress failures such as the Coconut Grove Fire, The Hartford Circus Fire, The Beverly Hills Supper Club Fire, and one count of an ingress tragedy, The Who Concert Stampede. When charted for comparison, commonalities could be found between all of these disasters (Chertkoff and Kushigian, 1999, pp. 106-107). All of these events had severe passage restrictions. The patrons all had limited to moderate knowledge of pathways. In all of the instances there was no emergency planning or training by staff for such an incident. Crowd density for each event was extreme and there was a

perceived limitation in time available and in most cases an extreme perception of the threat of death.

The Who Concert Stampede in Cincinnati, Ohio, December 3, 1979 did present a slightly unique situation from the other mentioned events. The Who Concert was an example of a tragedy occurring outside of the venue (Crowd Management Strategies, n.d.). The task force reports that the 14,000 tickets sold as festival seating caused there to be an inherent competition among ticket holders. The report maintains that there was also a complete lack of communication between the event organizers and the crowd. Even when there was communication, the organizers failed to heed the police officers pleas to open doors to relieve the crowd surge that took 11 young lives that day. This is an example of an event where there was no fire, no bomb, no overt danger. There was just the irrepressible movement of the crowd itself.

Conversely, Chertkoff and Kushigian (1999) also discuss historical successes such as the Trans World Airlines Jet Crash of 1992 and The World Trade Center Bombing of 1993. Unlike the aforementioned failures, these depictions were not “special events”. They are however accounts of successful egress events and do have their own commonalities. The passages were deemed adequate for the crowd size and the occupants had good path knowledge. While the emergency planning and training for the Trans World Airlines incident was regarded as excellent and the World Trade Center was considered inadequate, the fact remains that they did both have a plan and training. Chertkoff and Kushigian hold that this practiced plan and their ability to communicate effectively were key to these incidents being a success.

While many of the panic theories mentioned portray the group-think behavior exhibited by crowds as irrational, there are several “decision-making theories” which offer another explanation. According to Chertkoff and Kushigian (1999, p. 10) “Decision-making theories

assume that human behavior, whether there is danger or not, results from an attempt by the people involved to make decisions calculated to obtain good outcomes for themselves.”

Chertkoff and Kushigian examine several theories which are all based on this premise that individuals will do what they view as most advantageous for themselves. For example, in the case of a theater fire, so long as everyone in the crowd is calm and exiting in an orderly fashion, the probability of the group exiting unharmed is likely. But if even one person starts to push, then your individual likelihood of surviving increases if you push back. These theories maintain that once order breaks down, the most aggressive will survive. These theories attempt to establish that the assertive behavior is not irrational. Chertkoff and Kushigian state that “They (the crowd) were behaving rationally, in a way that maximized their own chances of exiting. If others cooperated, then one’s own chances of escaping were maximized by cooperating also, but if others competed, then one’s own chances of escaping were maximized by competing also” (p. 11).

The more recent tragedies of The E2 Night Club in Chicago, February 2003 and The Station Nightclub of West Warwick, Rhode Island later that same year are further examples of the devastation that can occur with assembly gatherings. Though these two events are too recent to provide significant published literature, they have caused recommendations to be made encouraging the continued research and understanding of human behavior in emergency situations (National Institute of Standards and Technology [NIST], 2006). As a direct response to these two events, the NFPA sponsored a special meeting of the Technical Committee on Assembly Occupancies (NFPA, 2007). At this meeting recommendations were made based on many needs including improved crowd management and changes in festival seating events (NFPA, 2003, July, pp. 13-15). The document reports that “Annually, many thousands of U.S.

concerts and other pop culture events (dances, raves, etc.) are held in small clubs and concert venues with less than 1,000 capacity occupant loads. Venues such as The Station (West Warwick, RI) and the E2 Club (Chicago, IL) are examples, not exceptions.” (NFPA, 2003, July, pp. 13-14).

Regardless of whether you subscribe to the panic theories or the decision-making theories as explanations of crowd behavior, the unmanaged crowd faced with an emergency has repeatedly shown the same disastrous results. Through all of these readings there were several common resolutions to these life safety management dilemmas: (a) strong leadership (including emergency planning and training), (b) early information to those in attendance, and (c) an ability to communicate through the crowd. Failure to mitigate these factors has shown a historical repetition of these tragedies.

Procedures

Research Methodology

This ARP was conducted using the action research method. The purpose of this project was to identify staffing needs for fire and rescue protection during special events and gatherings and to examine the necessity of an ordinance to address these needs. To accomplish this, research was done to discover current accepted industry safety practices and current legislation on the matter. Information was gathered by reviewing policies from other departments and jurisdictions. Additional resources such as published literature and Internet sites were utilized to discern answers to the defined research questions. Personal interviews were conducted with members of local governments, local associations, and other recognized organizations. This

information combined with current trends and historical data on past events was used to develop recommendations on this emerging issue in our community.

Literature Review

The literature review for this ARP began at the Learning Resource Center (LRC) at the National Fire Academy (NFA) in Emmitsburg, Maryland in September of 2005. The resources found there aided in narrowing the problem statement and in identifying research questions to be answered. Further literature reviews of pertinent publications concerning crowd psychology were used to understand how and when interventions can be useful in preventing loss of life. A few of these publications were gathered through research at the Clay County Public Library, Orange Park, Florida. The remaining majority of the readings were purchased to provide sufficient depth of information on the subject. Background and statistical information was largely gathered from on-line sources.

Ordinances and information from the following jurisdictions were significantly referenced during the composition of the proposed ordinance for Clay County:

- Brevard County, Florida (Municipal Code Corporation, 2005)
- The City of Cocoa Beach, Florida (Municipal Code Corporation, 2005)
- The City of Inverness, Florida (City of Inverness, n.d.)
- The City of Titusville, Florida (Appendix B)
- Howard County, Maryland (Municipal Code Corporation, 2005)

Data Review

Data was gathered on recent special events, gatherings and assemblies within Clay County. A review of CCFR run report records indicates that there have been no deaths within the past 5 years which have been directly or indirectly attributed to the crowd management dangers identified in this ARP. There have been individual deaths at assemblies such as cardiac arrests and electrocutions, but none that had a mitigating factor of the crowd gathering itself.

Data was reviewed on specific types of assemblies. These assemblies are tracked manually through the county fire prevention bureau. Data was also reviewed on specific special events which were known to this author.

Further data was collected on the fiscal impact of special events ordinances. The costs were approached from the perspectives of having and not having an ordinance. Data was reviewed as to the direct and indirect costs associated with a proposed ordinance.

Interviews

Multiple interviews were conducted during research for this ARP. The first interview was a brief meeting with Public Safety Director James H. Corbin. Corbin has served as the Public Safety Director for over 20 years. As Public Safety Director, Corbin headed the Clay County Fire/Rescue Department until October 2006. The initial interview was conducted at the Department of Public Safety Office in Green Cove Springs, Florida, during business hours on November 7, 2005. This preliminary meeting served to establish that special events and assemblies are recognized issues with the department. Later in the research process a more

detailed interview was held. This was conducted on March 20, 2006 and was also carried out at the Department of Public Safety during business hours. Information was shared regarding the established method for determining fire and rescue services at special events and the potential future needs of the department to provide these services to the community.

A brief interview was conducted with Lt. C. Wright of Clay County Fire/Rescue on November 10, 2005. Wright is currently a fire inspector with the county, and had previously served as the fire marshal. Wright has also served for the past three years as President of the Clay County Fire/Rescue Professionals Local 3362. Wright has been involved in writing a proposed fire prevention code ordinance (Appendix C). Information was shared about this ordinance, its inclusion of some brief language addressing special events and why the ordinance was never accepted.

An interview was conducted with Clay County Attorney M. Scruby. Scruby had previously spent some time researching the possibility of an events ordinance. The interview was conducted by phone on March 21, 2006 during business hours. In addition to our conversation, Scruby provided me via e-mail with a copy of the Brevard County ordinance he had been using as a template and with a copy of his own work product (Appendix D).

The Clay County Fair Association General Manager P. Sutton was also interviewed by phone. This interview was conducted on November 13, 2006 during business hours. Sutton has served as the general manager of the association since 2005. He shared information on attendance records, the association's priorities, and preparedness.

The next interview conducted was with Sergeant J. Davis, head of security at the Thrasher/Horne Building. The interview was conducted on the theater premises on December 1,

2006. The topics of discussion included building use, capacity, staffing and training. Davis spent nearly two hours answering questions and providing an incident pre-plan tour of the facility.

A phone interview was conducted with J. Gritton, a lieutenant with Daytona International Speedway Services. The interview was conducted by phone on May 8, 2007 during business hours. Gritton answered questions as accurately as he was able, but recommended a follow up conversation with T. Willrick who serves as the Director of Emergency Services for the Daytona International Speedway. Willrick was contacted by phone on May 10, 2007. Information was shared on attendance records, policies, training and staffing. The specific concerns of ingress and egress were discussed at length.

R. Doyle of Howard County Fire/Rescue, Howard County, Maryland, was interviewed by phone on May 15, 2007. Doyle is involved with delivering the “Crowd Manager Educational Seminar” through the Bureau of Life Safety. Doyle states that the program has been in place since 2005 and was developed as a direct result of the E2 Club and Station Night Club tragedies of 2003. Doyle shared information on the successes and the limitations of the program.

Finally, Fire Chief F. Ennist was interviewed by phone on May 15, 2007. Ennist has served as the Chief of CCFR since December 2006. Ennist answered questions addressing his vision and priorities for CCFR as it related to special events and assemblies. Ennist acknowledged that he did consider this an emerging issue not only for our department but for our community. He shared his perspective on what is needed to develop a comprehensive program to address these issues.

Assumptions and Limitations

At the beginning of the research an assumption was made that the term “special event” could be applied in a broad scope and meaning to include any gathering of a large number of people. It was discovered that there are very specific definitions which discern between “special event” and assembly. The stated purpose of this ARP is to identify staffing needs for fire and rescue protection during special events. The intent was to address needs for large gatherings of people. For that reason this research addresses both “special events” and some specific assemblies.

An assumption is also made that the information gathered from the available documents is accurate and in effect. The interviews are accepted as true and inclusive. The discussion of these readings, documents and facts collected are intended to be a correct representation of their original purpose and meaning.

A limitation affecting this research was the lack of adequate records on assembly occupancies and special events within our county. An attempt was made to gather data on the number of assemblies in Clay County. Lt. H. Earls, Fire Inspector states that there is no such researchable data system available (personal communications, May 24, 2006). The request for the records compiled manually for priority I, II, and III assemblies was also found to be incomplete. Additionally, there is no central collection point or data base for the number of special events that are granted through the Clay County Board of County Commissioners annually (M. Scruby, personal communication, March 21, 2006).

The last limitation was insufficient accessible documentation of policies or plans from non-governmental agencies on the subject. It was expected that the management staff of the

various venues would have policy in place for emergency ingress and egress plans. This was found not to be the case. Additionally, the comparison of commonalities between agencies that have attempted and failed to pass ordinances is difficult, as there are no public record histories of ordinances that were not adopted. Only anecdotal information is available on this subject.

Definition of terms

Assembly: “An occupancy (1) used for a gathering of 50 or more persons for deliberation, worship, entertainment, eating, drinking, amusement, awaiting transportation or similar uses; or (2) used as a special amusement building regardless of occupant load” (NFPA, 2007).

Priority I assembly: Refers specifically to night clubs.

Priority II assembly: Refers to an assembly that serves some food and has full liquor service.

Priority III assembly: Refers to an assembly that serves food and some alcohol such as wine or beer, but does not have full liquor service.

Special Event: Refers to any public event or celebration, and it may also include any private event in which it can be reasonably expected that services will be required beyond that which are regularly provided such as police, fire, medical or crowd control.

Results

This research began by addressing the section of the ARP purpose which is to identify staffing needs for fire and rescue protection during special events and assemblies. To identify these staffing needs a review of pertinent literature was conducted to discover what can be

expected of crowd behavior at these gatherings. There was a deeply sufficient amount of information available on the subject of crowd behavior. While the theories may vary, a common observation was made by most of the authors that an immediate intervention of definitive leadership at the time that the emergency occurs has the strongest effect on controlling a crowd.

Research Question I

What are some of the local ordinances which other agencies and organizations have developed in reference to special events or gatherings? The research finds that there are many governmental agencies that have official policies addressing special events. The detail and implementation of these policies varies greatly. For example, Cocoa Beach, Florida has a precisely written ordinance which contains many explicit requirements including a provision as to the specific calculations for the number of fire fighters and emergency medical technicians required for an event (Municipal Code Corporation, 2005). Most of the codes that have great detail address issues which are specific to their area and history. The Cocoa Beach ordinance actually addresses the protection of sea turtles. This is an example of an issue which is unique to their jurisdiction and not found in any of the other special events ordinances that were reviewed.

Other agencies, such as Titusville, Florida do not have lengthy ordinances in place. Instead they have concise policies addressing the permitting of special events (Appendix C). This allows for greater ease in changing pay schedules or updating the policy in general. Titusville has a permit application with a detailed instruction sheet which provides all of the requirements for those holding an event.

Still others, such as Howard County Fire/Rescue, Howard County, Maryland, have a combination of ordinances and policies (Municipal Code Corporation, 2005). Howard County has an ordinance which strongly references NFPA 101 *Life Safety Code*. To augment their ordinance they have policies in place for the permitting of special events and for a recognized crowd manager training program for all assemblies (R. Doyle, personal communication, May 15, 2007).

Research showed that most of the ordinances that do exist have similar requirements pertaining to fire and rescue personnel. Commonly they necessitate that the special event request be submitted within a specific time frame. The request is then forwarded through various divisions of the applicable government agency. The appropriate member of the fire and rescue division reviews the special event plan and then on a case by case basis decides the staffing requirement to be implemented.

The Clay County Fair Association (CCFA) was contacted and a request was made for a copy of their policy addressing special events, crowd management, or fire and rescue requirements. Association General Manager P. Sutton (personal communication, November 13, 2006) states that there was no such written policy available for review. During his interview Sutton states that the Clay County Sheriff's Department is contracted for security and that his expectation is that they would handle crowd management. Sutton further states that his annual request for fire and rescue personnel is non-specific and at the complete discretion of that division.

Daytona International Speedway also reported that, while they do have some internal Emergency Action Plans (EAP) in place, they do not have a specific policy to address fire and rescue staffing or crowd management. During his interview T. Willrick, Director of Emergency

Services, states that they do have over 100 police, fire and security personnel on staff at the speedway. He states that the size of the event occurring dictates the number of staff members they schedule for the day. As a general rule, they have 1 staffed ambulance for every 10,000 people in attendance. He goes on to say that he has recently become familiar with NFPA 101 and has been researching the requirements for crowd managers. He states at this time, however, there is no written policy that is available for review.

Research Question 2

What are the commonalities between legislation which has been successful and between others who have tried and failed to pass ordinances? One of the first things noted when researching common elements of agencies that had special event ordinances or policies in affect was that most of them also had adopted some sort of fire prevention ordinance. While some of the legislation was more detailed than others, the verbiage itself seems to have less to do with the success of the ordinance than does the mind set of the agencies that have enacted them. Agencies with codes addressing proactive prevention plans seem commonly to include special events in their considerations. This point is echoed during the interview with Doyle who attributes Howard County Fire/Rescue's success with their special events ordinance and assembly crowd manager program to their strong commitment to fire prevention and safety.

The size and expectations of the events does seem to have some bearing on the substance of the ordinance itself. Those areas hosting larger venues seem to prefer formal ordinances containing a more detailed account of their requirements. Other areas hosting smaller venues rely on simple policies and procedures.

Research on comparisons among agencies having unsuccessful attempts at legislation is more difficult. In determining why the prior modest attempts at establishing ordinances in Clay County have failed, one common answer was offered: priorities. In the interview with County Attorney M. Scruby, he states that his attempt at the special events ordinance was not abandoned; it had just been lost in a sea of other more pressing priorities. As county attorney, his focus on a special events ordinance obviously was more encompassing than just the consideration of fire and rescue staffing. Scruby expressed that, while fire and rescue was an important part of the ordinance, he felt that the department had done a reasonable job of staffing events as needed in the past. It was not that Scruby necessarily gave the life safety aspects of the special events ordinance low priority, but more that he believes that these needs are already being met.

The interview with C. Wright provided a different perspective. As a previous member of fire prevention, Wright felt that the failure to pass the proposed fire prevention code did show a lack of priority towards this issue of life safety. While sympathetic to Wright's opinion, in his interview Public Safety Director J. Corbin did not agree. Corbin states that it was not a lack of priorities, but the presences of other urgent issues and responsibilities that prevented an aggressive campaign for the fire code.

Research Question 3

What is the potential financial impact of such an ordinance? The research on the financial impact of a potential events and assemblies ordinance has many prongs. First examined was the cost to the department of implementing such an ordinance. The most easily identifiable

departmental costs are related to employee's salaries. Clay County Fire/Rescue Local 3362 is the recognized bargaining agent for the department members. Employees would be compensated in accordance with Article 18 of the Union Contract (Appendix E). In the ordinances reviewed during this research, these costs as well as associated costs of supplies are generally passed on to the event coordinator. Exceptions are sometimes made based on the nature or purpose of the event. Therefore the salary costs associated with staffing special events or assemblies is not considerable to the department itself.

In his interview Chief F. Ennist (personal communication, May 15, 2007) did express concern for non-profit and charitable groups who hold smaller events and assemblies. Ennist's apprehension was that they may not be able to recover from costs incurred if they were required to bear the expense of manpower. Ennist expressed a desire to provide a policy that would serve to minimize this possible financial impact on the community.

To further examine the possible financial impact on the community, research was done on the potential cost of *not* having an enforceable ordinance or policy on events and assemblies. The National Center for Injury Prevention and Control (NCIPC) has studied both the direct and indirect costs of injuries (n.d., p.1). The NCIPC identifies direct costs as those attributed to medical care and rehabilitation for injured patients. The indirect costs are those associated with morbidity and mortality due to injuries. These figures are calculated based on the estimation of a lifetime value for productivity lost or reduced due to an injury. The NCIP (n.d., p.3) document reports that in 1985, 41% of the \$157.6 billion dollars estimate for lifetime cost was due to morbidity. NCIP goes on to report that the groups between the ages of 25-44 alone constituted a loss of nearly \$29 million dollars due to morbidity (n.d., p.4).

After the loss of productive life costs are considered, the risk itself was examined. First an effort was made to collect data on the number of priority assemblies that exist in each fire district. The data provided through the fire prevention bureau was incomplete, so figures were gathered based on known establishments and past inspection records. Table 1 demonstrates the number of each of these groups by fire district.

Table 1

Priority Assemblies and Events by Fire District

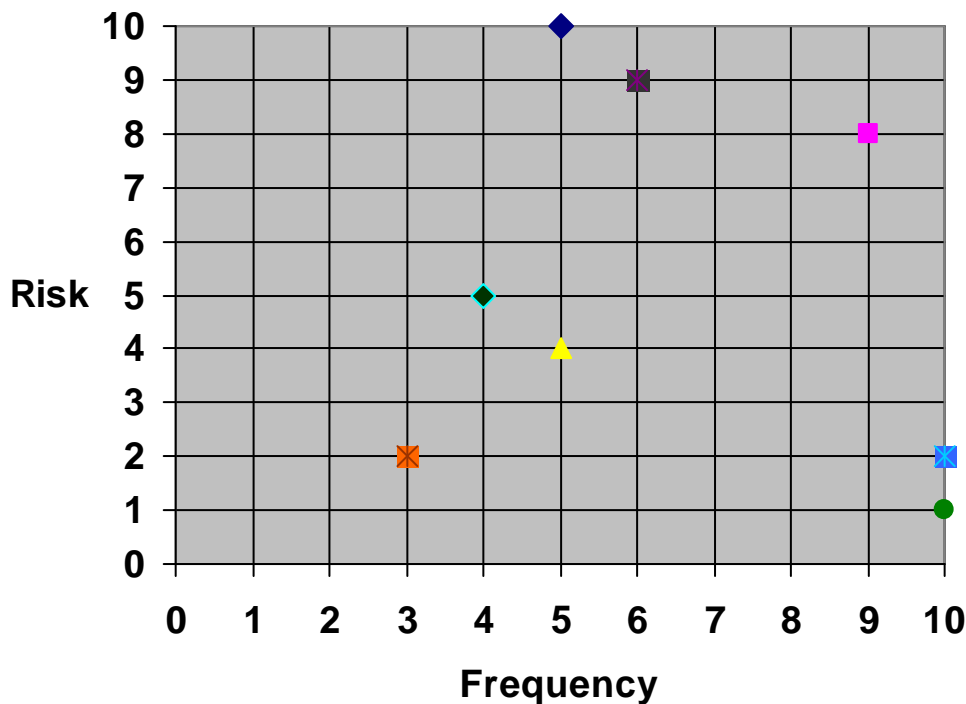
	Fire #10	Fire #13	Fire #14	Fire #15	Fire #17	Fire #18	Fire #20	Fire #22	Fire #23	Fire #24	Fire #25	Fire #26	Total
Priority I Assemblies	1	1	0	0	2	4	0	0	1	1	0	0	10
Priority II Assemblies	0	0	5	0	0	16	0	10	0	0	0	0	31
Priority III Assemblies	0	0	0	1	3	3	3	5	0	0	0	0	15
Special Events/ Assemblies >250 and festival seats	1	1	0	1	1	3	3	2	0	0	0	2	14

After establishing the number of priority venues existing in the county, the Risk/Frequency model (NFA, 2005, pp. SM 1.8-1.9) is used to map the groups. The results of this mapping are shown in Figure 1. Based on the mapping demonstrated in Figure 1, research was focused on priority I assemblies, priority II assemblies, and special events and assemblies with greater than 250 attendees and festival seating. Though these events do not map as the most frequent, the risk that is involved due to mitigating factors such as alcohol, limited

ingress/egress, and number of people potentially affected warrant these as high priority gatherings. In fact, as addressed in the Leading Community Risk Reduction course “low-frequency/high-risk events have the greatest potential for major disaster....impacts on community vitality are severe, and the psychological effects can linger for years” (NFA, 2004, p. SM 1-74).

Figure I

Risk/Frequency of Priority Assemblies and Special Events

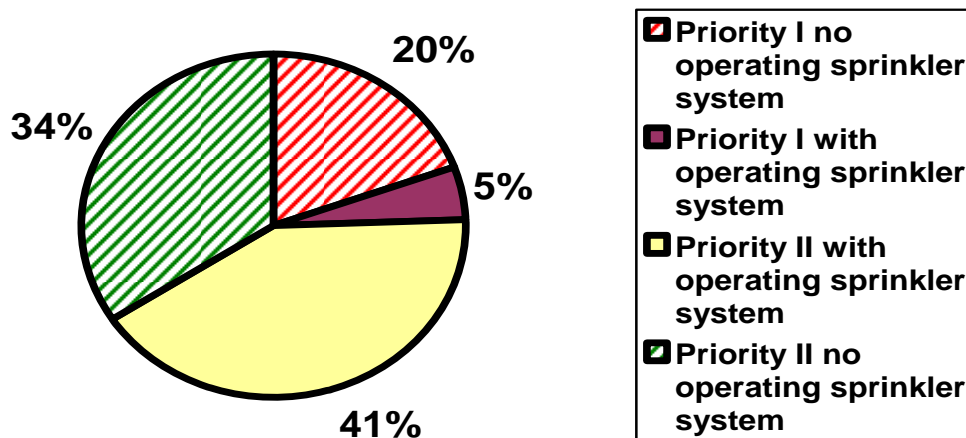


- ◆ Priority I Assemblies
- Priority II Assemblies
- ▲ Priority III Assemblies
- ◆ Outdoor Special Events with >250 attendees
- Special Events with >250 attendees and festival seating
- Outdoor Special Events with <250 attendees
- ✕ Other Assemblies with >250 attendees
- Other Assemblies with <250 attendees

Further evaluation of the priority I and II assemblies reveals that those with operating sprinkler systems pose a significantly lower risk than those without sprinkler systems (NFPA, 2003, July). Figure 2 identifies the percentage of those assemblies with operating sprinkler systems.

Figure 2

Operating Sprinkler Systems in Priority I and II Assemblies



The total number of priority I and II assemblies is 10 and 31 respectively. Figure 2 indicates that 54% of those priority I and II assemblies do not have operating sprinkler systems. According to the NFPA findings, this would place patrons at these venues at a higher level of danger than those in attendance at facilities with operating sprinkler systems. This makes the task of crowd management and egress of even more vital importance.

Special events and assemblies with an attendance of greater than 250 and festival seating were also identified as primary concerns. The largest venue in the county posing this risk is the stage and arena areas of the Clay County Fair Grounds. Table 2 identifies the attendance trends for the Clay County Fair for the past three years as reported by Clay County Fair Association (CCFA) General Manager P. Sutton (personal communication, November 13, 2006). Sutton states that the highest daily attendance record as of 2006 was 16,000 people. This daily attendance was a compilation of visitors over the entire day. Crowd peak was estimated to be over 5,000 during some of the head line concerts.

Table 2

CCFA Attendance Records 2003-2005

Year	Cumulative Attendance for 10 day event
2003	104,000
2004	75,000-80,000
2005	110,000

Discussion

The first question of this ARP is what are some of the ordinances which other agencies and organizations have developed in reference to special events or gatherings? Many larger metropolitan areas have very exact ordinances that speak to most of the conceivable issues surrounding special events. Chief Ennist (personal communication, May 2007) stresses the importance of addressing the priorities of our community without overwhelming their ability to conform to these new requirements. Forming our own policy by gleaning information from some

of the more complex ordinances while including the flexibility needed for our rapid growth and new needs would seem to be a prudent course.

The research also indicates that early intervention at the time of the emergency is the key to a desirable crisis outcome. NIST (2006) gives recommendations that departments adhere to the response standards established by the NFPA. Having fire and rescue personnel at large scale events can certainly help with the early mitigation and serve as an impediment to the intensification of the emergency. Chertkoff and Kushigian (1999) recount in the case of the Coconut Grove fire, the first fire fighters on the scene happened to see the smoke while extinguishing a car fire about a block away. One of the crew members actually sounded the second alarm box only 3 minutes after the initial box had been sounded by a citizen. The problem was that the fire had been burning unabated for approximately 15 minutes prior to the initial alarm.

Early intervention at the time of the emergency does mean more than just the number of fire and rescue personnel on the scene. It refers to the level of preparedness of those employees of the venue who are in a position of leadership. Chertkoff and Kushigian (1991) suggest “Maximize the effectiveness of leader influence by training workers so that they know and can execute leadership acts automatically” (p.127). The information in this ARP indicates that while fire and rescue personnel are vital to the mitigation of an emergency, the life safety outcome of those in attendance is more dependent on the venue staff having a prepared and practiced emergency plan.

Optimally, there should be a balanced between the government’s interest in protecting its citizens and the venue coordinators ability to carry out their intended purpose. “Owners and managers cannot be relied upon to provide a completely safe structure. Government must enact

laws that mandate a safe structure and these laws must be rigidly enforced.” (Chertkoff and Kushigian, 1999, p. 127). The policies developed should be ordained by the local government so that there are enforcement consequences and should also have achievable requirements that encourage event and assembly coordinators to be involved in the safety of their patrons.

The second question of this ARP is what are the commonalities between legislation which has been successful and between others who have tried and failed to pass ordinances? “Do not be overconfident about being able to change the view of an owner or manager...government officials may have to compel an owner or manager to take the proper safeguards.” (Chertkoff and Kushigian, 1999, p. 126). The research shows that the same may be said of local governmental authorities. There should not be overconfidence in an authority’s willingness to pass legislation addressing event and assembly safety if they have not been given compelling information as to its importance. Chertkoff and Kushigian do offer some possible explanations. They contend that people in general, whether they are the public, the facility owners, or in some cases the policy makers, tend to have a psychological denial of the possibility of a horrible event occurring to them. People simply do not want to believe that it will occur. This is why in the absence of a morbid event there is apathy, and immediately following one there is upheaval. They also advise that concern generated solely by a devastating event can be powerful initially, but is almost always short lived.

Chertkoff and Kushigian go on to say that sometimes minor incidences serve to build a false confidence in a venue’s ability to avert a tragedy. In 1970 The Beverly Hills Super Club virtually burned to the ground. This was seven years before the devastating fire that took 165 lives. Ringling Brothers & Barnum and Bailey Circus had literally dozens of small fires before the 1944 fire that took 168 lives. Riverfront Coliseum in Cincinnati had experienced severe

crowd management problems with almost every major concert that they had hosted before the 1979 Who Concert where 11 people were trampled to death. With each of these previous events, though, there had been no loss of human life. “The research evidence indicates that people who believe a structure is safe would view such prior fires, because they had not led to loss of human life, as proving the adequacy of safeguards, and they would actually feel safer than they had originally.” (Chertkoff and Kushigian, 1999, p. 125).

The disbelief that a catastrophic event will occur, or the belief that in its presence the current safeguards would be sufficient, could serve to explain why no past attempts at an events policy have succeeded in Clay County. The interviews with Corbin, Sutton and Scruby all gave a sense that they found the services provided at the previous events to be sufficient mainly due to the lack of evidence that they were not. It would not be fair to state that this belief was the result of any of them holding life safety as a low priority. Instead the interviews suggested that this belief was due to insufficient information that additional policies or regulations were needed.

Doyle (personal communication, March 2007) states that “Enforcement through education” is the unofficial mantra for the Howard County Fire Department. He states that their fire prevention and crowd manager programs are successful due to the considerable amount of time spent on educating the stake holders. He states that a principle part of the program involves providing information as to why these codes are in place and necessary. He states that the extra time spent with the facility owners and event organizers builds a much stronger working relationship. He states that one shorting coming of the program is that their department’s line staff is not provided the crowd manager training. This means that the units they are sending to staff the events potentially have less training in crowd management than the event organizers.

It is uncertain why some agencies have extremely succinct ordinances that address these dangers while others seem to struggle with setting these priorities. There does seem to be a correlation between successful ordinances and a strong commitment to prevention programs. While anecdotal stories of horrific events serve to stir communities to short term action, the understanding of crowd behavior and identifying actual community risks are required for permanent solutions.

The last question of the ARP is what is the potential financial impact of such an ordinance? It appears customary through the reviewed ordinances to pass on the cost of personnel to the event organizers. This seems practical with large events when the organizers are benefiting financially and certainly have a responsibility to ensure a reasonable safety for their patrons. For the smaller events being held by churches or other non-profit organizations, these costs could be devastating. Chief Ennist (personal communication, May 2007) states that one of the priorities to establishing a policy for special events and assemblies should be to define the types of events to be serviced. He states that with a policy that properly identifies gatherings that pose little threat of injury or loss of life to those in attendance we can reduce the financial burden to those charitable or non-profit organizations.

The cost of personnel represents the simplest aspect of the financial impact. The financial impact associated with the sheer number of people who can potentially be affected at a large gathering can devastate a community. The NCIPC report gave nationwide statistics on dollars lost as a result of the reduction of expected life productivity nationwide due to traumatic injury. Concentrate those losses to a single local event like those held at the Clay County Fair grounds where over 5,000 are reported to attend headliner concerts with festival seating. The potential

consequence of hundreds of people from the same relatively small community being affected has a considerable financial impact.

The old adage “you can’t stop progress” is certainly true in regards to the future growth of Clay County. And while it is true that you can’t stop it, you can plan for it. It is certain that with the continued growth to the area that promoters and organizers will find this to be a rich environment for their events. Many of the new facilities like the Thrasher-Horne Center will meet codes providing sprinkler systems and other safety features. But as those gathering outside of Riverfront Coliseum in Cincinnati found, the danger is sometimes the crowd itself.

In closing, the purpose of this ARP was to identify staffing needs for fire and rescue protection during special events and to examine the necessity of an ordinance to address these needs. The research resulted in this author understanding that, while there is certainly the necessity for an established events ordinance, staffing is only one aspect of providing better life safety in Clay County. A meaningful comprehensive special events and assemblies ordinance has many facets. In addition to adequate fire and rescue protection at large events there needs to be an understanding of crowd psychology and behavior, a program to address crowd management training, a commitment to prevention practices, and a working relationship with our government bodies, facility owners and event coordinators. We have to be vigilant in our efforts to provide authorities with the necessary information to make this a priority effort in our community.

Recommendations

In order to address the staffing needs required to afford optimal life safety protection to the residents, guests and employees of Clay County, the following recommendations are made for Clay County Fire/Rescue:

- Review the attached “Special Events Ordinance” for revision and submission to the Clay County Board of County Commissioners (Appendix F)
- Review the attached “Special Events Permit Application” for revision and submission to the Clay County Board of County Commissioners (Appendix G)
- Review for consideration the attached policy for fire and rescue staffing calculations at “Special Events” (Appendix H)
- Develop a data base to establish the number and types of assemblies represented in Clay County
- Develop a “crowd manager training program” by December 2007
- Deliver the pilot offering of the crowd manager program to fire/rescue personnel by January 2008
- Begin outreach and information on the upcoming program to Priority I and II assemblies and venues with an occupancy of greater than 250 and “festival seating” by January 2008
- Begin delivering the “crowd manager training program” quarterly with the first offering beginning in April 2008
- Evaluate the effectiveness of the crowd manager training program by December 2008
- Evaluate the effectiveness of our attempt to have the governing body adopt special events legislation noting the failures for revision and the success for replication by others.

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